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Titolo	Damage Detection and Structural Health Monitoring of Concrete and Masonry Structures : Novel Techniques and Applications // edited by Hashem Jahangir, Harish Chandra Arora, José Viriato Araújo Dos Santos, Krishna Kumar, Aman Kumar, Nishant Raj Kapoor
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Nota di contenuto	Chapter 1 Introduction to Damage Detection and Structural Health Monitoring -- Chapter 2 Damage Detection of Reinforced Concrete Structures -- Chapter 3 Masonry structure's Damage Detection -- Chapter 4 Conventional Methods of Damage Detection -- Chapter 5 Natural Frequencies and Frequency Response Functions -- Chapter 6 Acoustic Emission Tests -- Chapter 7 Model Analysis Based Techniques -- Chapter 8 Laser Scanners Database Analysis -- Chapter 9 Unmanned Aerial Vehicle for Damage -- Chapter 10 Shearography Tests -- Chapter 11 Role of Artificial Intelligence in Damage Detection -- Chapter 12 Signal Processing Methods -- Chapter 13 Image Processing Techniques -- Chapter 14 Role of Smart Materials in Damage Detection

Sommario/riassunto

This book offers the use of artificial intelligence, image processing, model analysis, laser scanners, shearography, drones, contourlet, wavelet, signal processing techniques and other SHM techniques to detect the damages in the concrete as well as masonry structures. Corrosion is one major factor that causes reinforced concrete structures to deteriorate over time. However, the degrading process is not evenly distributed throughout the structure. The damage can be detected timely and the structure's degradation model can be updated with the help of proper monitoring and inspection techniques. The damages in the masonry structures may happen due to moisture ingress, cracking, mortar failure, settlement and spalling, etc. Structure health monitoring (SHM) may assist in understanding the structures deterioration mechanisms and reducing the ongoing deterioration in a scientific manner. A complete detail of both the traditional and cutting-edge approaches used in the SHM process is described in this book. The latest non-destructive techniques and semi-destructive techniques shall also be discussed in this book. This book aids academics and industry professionals with recent developments in SHM techniques. Additionally, it encourages researchers in coming up with creation of newer applications in structural engineering.